

CLAIMS

What is claimed is:

1. A method of processing a request for a plurality of Web services comprising the steps of:

receiving a request specifying at least two Web services;

storing an object pattern from the request in a common memory;

scanning the common memory with a plurality of watchers, wherein each watcher is associated with a Web service and specifies a rule for invoking an associated one of the Web services; and

detecting that the object pattern matches a rule of at least two of the watchers, wherein each watcher having a rule matching the object pattern invokes an associated one of the Web services.

2. The method of claim 1, further comprising the step of extracting the object pattern from the request prior to said storing step.

3. The method of claim 1, wherein each watcher scans the common memory in parallel such that more than one Web service can be invoked concurrently.

4. The method of claim 1, wherein the at least two watchers of the detecting step invoke an associated one of the Web services sequentially.

5. The method of claim 1, wherein at least one of the invoked Web services instructs an associated one of the watchers to modify the object pattern, said method further comprising the steps of:

the associated one of the watchers modifying the object pattern according to instructions from the associated Web service;

a different watcher determining that the modified object pattern matches at least one rule of the different watcher; and

the different watcher invoking the Web service corresponding to the different watcher.

6. The method of claim 1, further comprising watchers continuing to invoke Web services until a termination watcher detects a termination criterion and removes the pattern object from the common memory.
7. The method of claim 6, further comprising the step of sending a response to the request, wherein the response specifies, at least in part, the pattern object.
8. The method of claim 1, further comprising the step of at least one of the watchers modifying the pattern object according to instructions from an associated one of the Web services.
9. A server for processing complex requests for Web services comprising:
 - a Hypertext Transfer Protocol server configured to receive a request for more than one Web service;
 - at least one servlet configured to extract a pattern object from the request and to format a response to the request;
 - a common memory that temporarily stores the pattern object while the Web services specified by the pattern object execute;
 - a plurality of watchers, each watcher corresponding to a particular Web service and including a rule for invoking the associated Web service, wherein each of said watchers scans said common memory in parallel to determine whether a stored pattern object matches a rule for invoking an associated one of the Web services; and
 - a termination watcher configured to detect termination criterion;
 - wherein the termination watcher provides the pattern object back to one of said plurality of servlets to generate a response upon detecting the termination criterion.
10. The system of claim 9, wherein said watchers scan said common memory in parallel such that more than one Web service can execute concurrently.

11. The system of claim 9, wherein said watchers invoke more than one Web service sequentially.
12. The system of claim 9, wherein an invoked Web service instructs an associated watcher to modify the object pattern such that a different one of said watchers determines that the modified object pattern matches a rule and invokes the Web service corresponding to said different one of said watchers.
13. The system of claim 9, wherein said watchers are further configured to modify the pattern object according to instructions provided from an associated one of the Web services.
14. A machine readable storage, having stored thereon a computer program having a plurality of code sections executable by a machine for causing the machine to perform the steps of:
 - receiving a request specifying at least two Web services;
 - storing an object pattern from the request in a common memory;
 - scanning the common memory with a plurality of watchers, wherein each watcher is associated with a Web service and specifies a rule for invoking an associated one of the Web services; and
 - detecting that the object pattern matches a rule of at least two of the watchers, wherein each watcher having a rule matching the object pattern invokes an associated one of the Web services.
15. The machine readable storage of claim 14, further causing the machine to perform the step of extracting the object pattern from the request prior to said storing step.
16. The machine readable storage of claim 14, wherein each watcher scans the common memory in parallel such that more than one Web service can be invoked concurrently.

17. The machine readable storage of claim 14, wherein the at least two watchers of the detecting step invoke an associated Web service sequentially.
18. The machine readable storage of claim 14, wherein at least one of the invoked Web services instructs an associated one of the watchers to modify the object pattern, said machine readable storage further causing the machine to perform the steps of:
 - the associated one of the watchers modifying the object pattern according to instructions from the associated Web service;
 - a different watcher determining that the modified object pattern matches at least one rule of the different watcher; and
 - the different watcher invoking the Web service corresponding to the different watcher.
19. The machine readable storage of claim 14, further causing the watchers to continue invoking Web services until a termination watcher removes the pattern object from the common memory.
20. The machine readable storage of claim 19, further causing the machine to perform the step of sending a response to the request, wherein the response specifies, at least in part, the pattern object.
21. The machine readable storage of claim 14, further causing at least one of the watchers to modify the pattern object according to instructions provided from an associated one of the Web services.
22. A system for processing a request for a plurality of Web services comprising:
 - means for receiving a request specifying at least two Web services;
 - means for temporarily storing an object pattern from the request;

means for scanning said means for storing, wherein said means for scanning is associated with a plurality of Web services and specifies rules for invoking selected ones of the Web services; and

means for detecting that the object pattern matches a rule of said means for scanning, wherein said means for scanning invokes at least two Web services according to matched rules.

23. The system of claim 22, further comprising means for extracting the object pattern from the request prior to operation of said means for storing.

24. The system of claim 22, wherein said means for scanning scan said means for storing such that more than one Web service can be invoked concurrently.

25. The system of claim 22, wherein said means for scanning invoke at least two of the Web services sequentially.

26. The system of claim 22, further comprising means for sending a response to the request, wherein the response specifies, at least in part, the pattern object.

27. The system of claim 22, said means for scanning further comprising means for modifying the pattern object according to instructions provided from an associated one of the Web services.